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ACTIVITIES OF THE SIBERIAN BRANCH OF THE  
ACADEMY OF SCIENCES USSR

By A. K. Chernenko

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FOREWORD

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USSR ACADEMY OF SCIENCES

-USSR-

Following is the translation of an article by  
A.K. Chernenko in Izvestiya Sibirskogo Otdeleniya  
AN SSSR (News of the Siberian Branch of the USSR  
Academy of Sciences), No 12, Novosibirsk, December  
1960, pages 135-137

The General Meeting of the Siberian Branch of the USSR  
Academy of Sciences

One of the General Meetings of the Siberian Branch of  
the USSR Academy of Sciences was held on 20 October, 1960.

The Meeting considered reports presented by Directors  
of the Unified Scientific Councils and the Chairman of the  
Commission on Social Sciences of the Siberian Branch of the  
USSR Academy of Sciences, as regards plans for scientific  
research work to be carried out by the agencies of the Branch  
in 1961, as well as the projects included in the plan for the  
introduction and experimental-industrial testing of results  
of completed scientific studies in the field of the national  
economy.

Reports were presented by the following persons:  
on physico-mathematical and technical sciences - Academician  
S.L. Sobolev; on the chemical sciences - Corresponding-Member  
of the USSR Academy of Sciences A.V. Nikolayev; on the  
geological and geographic sciences - Academician A.A.  
Trofimuk; on the biological sciences - Doctor of Agricultural  
Sciences A.B. Zhukov; on the economic sciences - Corres-  
ponding-Member of the USSR Academy of Sciences G.A.  
Prudenskiy; on the social and humanitarian sciences -  
Doctor of Philosophical Sciences I.I. Matveyenkov.

The plans were discussed by Academician S.A.  
Khristianovich, Corresponding-Members of the USSR Academy of  
Sciences G.B. Boki, I.I. Novikov, V.V. Voyevodskiy, N.N.  
Vorozhtsov, G.I. Budker, Candidate of Technical Sciences  
A.A. Naumov, and others.

The scientific research plan includes 90 problems, including 40 problems in the physico-mathematical and technical sciences, 20 problems in the chemical sciences, 8 problems in the geological and geographic sciences, 13 in the biological sciences, 2 in the economic sciences, and 7 in the humanitarian and social sciences.

The problem plan is directed toward the realization of the decisions adopted at the XXIst Congress of the Communist Party of the Soviet Union, and is intended to expedite the quickest possible development of the productive potential of Siberia and the Far East.

In 1961, there will be an increased number of projects having to do with direct applications to the national economy.

The plan covering the introduction of new methods and processes and experimental-industrial testing, includes 139 projects, while the analagous plan for 1960 included only 41 such projects.

The General Meeting approved the work plan for the Branch agencies for 1961. Academician S.A. Khristianovich reported on the progress in the construction of scientific facilities for the Siberian Branch of the USSR Academy of Sciences, and on the construction plan for 1961.

"The problem of constructing facilities for the Siberian Branch," said the speaker, "is that question of questions which will determine the future of the Siberian Branch and our work. However, despite the fact that over the last year construction work has been proceeding with much more success than in former years, the fulfillment of the plan for the first nine months of 1960 is nevertheless lagging".

The scientists discussed the urgent problems involved in the construction of Siberian Branch facilities both in Akademgorodok and in the center of the city of Novosibirsk. They emphasized the necessity for the intensification of construction work in the area of institute buildings, cultural facilities in Akademgorodok, as well as library buildings; in addition, they emphasized the need for transferring the library from Moscow to Novosibirsk as soon as possible, pointing out that this was a necessary condition for the normal work of the scientists of the Siberian Branch.

Also subjected to scrutiny was the state of construction work at the Branch affiliates (filialy) and the multi-purpose institutes.

As a result of the discussion which included among its participants Academicians I.N. Vekua and A.L. Yanshin, Corresponding-Members of the USSR Academy of Sciences A.V. Nikolayev, I.I. Novikov, G.B. Bokiy, N.N. Vorozhtsov, and E.E. Fotiadi, Candidate of Technical Sciences M.M. Savkin, Candidate of Technical Sciences A.A. Naumov, and

Building Director of the Sibakademstroy (Siberian Academic Construction) I.M. Ivanov, the building plan for 1961 was approved.

At the General Meeting, the Vice-Chairman of the Novosibirsk Council of Workers' Deputies, Comrade M.P. Smirnov, acting at the behest of the Presidium of the USSR Supreme Soviet, conferred on Corresponding-Member of the USSR Academy of Sciences T.F. Gorbachev the Order of Lenin, for his contribution to the development of the coal industry and mining science, in connection with his sixtieth birthday.

The General Meeting elected Corresponding-Member of the USSR Academy of Sciences A.S. Khomentovskiy to be Chairman of the Presidium of the Far Eastern Affiliated Branch of the Siberian Branch of the USSR Academy of Sciences.

Corresponding-Members of the USSR Academy of Sciences L.A. Melent'yev and A.S. Khomentovskiy were elected to membership in the Presidium of the Siberian Branch of the USSR Academy of Sciences.

At its evening session, the General Meeting heard two scientific reports.

The Director of the high-voltage section of the Transport-Power Institute, Dr. of Technical Sciences Professor V.K. Shcherbakov, presented a paper on the subject of "Long-Distance Electrical Transmission Along Half-Wave Lines".

Results obtained through research afford a new approach to the solution of the nationally important problem of creating a unified power system for the USSR, and, in particular, to the problem of high power transmission from the Angaro-Yenisey hydro-electric stations and thermal electric stations, based on the cheap brown coal found in the Kansk-Achinskiy Basin, to the Urals and the European portion of the USSR. It was demonstrated that long-distance half-wave electrical transmissions are economically feasible and technically possible over distances of from 2 to 3 thousand kilometers. In contrast to direct current long-distance high-voltage electrical transmissions, half-wave alternating current transmissions do not require any complex research on the creation of special apparatus (in the case of direct current, there is the large problem of developing high-voltage valves, etc.), since they can be carried along on apparatus and equipment which has already undergone practical testing as a part of functioning high-voltage alternating current electrical transmissions.

The Director of the Catalysis Institute, Corresponding-Member of the USSR Academy of Sciences G.K. Boreskov, presented a report entitled "The Modelling of Catalytic Processes". The speaker described the basic principles of calculating

contact apparatus, that is, those reactors, in which catalytic chemical transformations are carried out in industry. This problem is of importance to the development of the entire chemical and petroleum refining industry. The problems of determining optimum conditions require that one take into account the complex kinetic laws involved in catalytic transformations. Precise solutions to practically all problems connected with the calculation of contact apparatus, can be obtained only with the aid of rapid electronic computers, which open up wide perspectives for progress in the chemical industry. The co-operation of chemists, mathematicians, hydrodynamicists, and specialists in the field of automation and electrical measurement, as well as others working in the various agencies of the Siberian Branch, creates favorable conditions for the realization of these possibilities within a short span of time.

#### In the Unified Scientific Council on the Physico-Mathematical and Technical Sciences

Regular meetings of the Unified Scientific Council on the Physico-Mathematical and Technical Sciences of the Siberian Branch of the USSR Academy of Sciences were held on 17 and 18 October, 1960.

The Scientific Council discussed and approved the project plans of the agencies under the Siberian Branch concerned with physico-mathematical and technical problems for 1961. At the same time, plans for the introduction and experimental-industrial testing of scientific research results in the national economy for 1961 were also considered. In addition to this, the meeting examined and confirmed the plan for sessions, conferences, discussions, and meetings to be held by the institutes during this period.

Doctor of Technical Sciences Professor V.A. Smirnov presented a paper on the trends of scientific research in the radio communications section presently being newly organized within the Radio Physics and Electronics Institute. The Scientific Council approved the thematic research outline on long-distance radio communications, and confirmed the structure of this section within the framework of the five new laboratories.

At the morning session of the Scientific Council of 17 October, Candidate of Technical Sciences B.V. Voytsekhovskiy defended his dissertation for the scientific degree of Doctor of Physico-Mathematical Sciences, on the subject of "Detonation Spin and Stationary Detonation".

The official opponents were Corresponding-Members of the USSR Academy of Sciences K.I. Schelkin, D.V. Shirkov, and A.A. Koval'skiy. Among the persons discussing the dissertation were Academician S.A. Khristianovich and other members of the Council. The defense was successful.

The dissertation defenses continued on 18 October. A.M. Dykhne received the scientific degree of Candidate of Physico-Mathematical Sciences for a dissertation on the subject "Alterations in Adiabatic Invariants in Classical and Quantum Physics". Doctor of Physico-Mathematical Sciences Professor I.M. Khalatnikov and Candidate of Physico-Mathematical Sciences B.V. Chirikov played the role of official opponents.

V.I. Volosov defended a dissertation on the subject "The Study of Several Peculiarities of Intense Electron Streams", submitted in consideration for the scientific degree of Candidate of Physico-Mathematical Sciences. The official opponents were Doctor of Physico-Mathematical Sciences Professor Yu.B. Rumer and Candidate of Physico-Mathematical Sciences M.V. Nezlin. The Council likewise considered the matter of conferring the titles of scientist on seniorscientific researchers Candidate of Technical Sciences G.V. Krivoshechekov and Candidate of Physico-Mathematical Sciences S.M. Belonosov, and also solved a number of other problems.